

**Table III: Technical Targets for Catalyst Coated Membranes (CCMs):  
Stationary**

All targets must be achieved simultaneously

Characteristics	Units	Calendar year		
		2002 status <sup>a</sup>	2005	2010
Membrane Areal Resistance in cell, operating temperature	$\Omega\text{-cm}^2$	0.1	0.1	0.1
Cost <sup>b</sup>	\$/kW	--TBD	250	100
Operating Temperature	$^{\circ}\text{C}$	160	120-160 <sup>c</sup>	140-180
Durability	Hours	5000	>15000	>40000
Survivability	$^{\circ}\text{C}$	-20	-30	-40
Catalyst loading	$\text{mg/cm}^2$	2	1	0.25
Performance (0.7 V) --EOL	$\text{A/cm}^2$	0.15	0.25	0.35
G/kW for loading				
CO tolerance (steady state—w/o air bleed)	ppm	8000	30000	50000
Recoverability CO (transient, <30 min)	ppm	20000	50000	100000

Notes:

- a) Status is present day 80 $^{\circ}\text{C}$  unless otherwise noted; targets are for new membranes/CCMs
- b) Includes projected cost advantage of high volume production
- c) Range extended to encompass PBI membranes